

HEALTH SCIENCE EDUCATION

Indiana State Approved Course Titles and Descriptions

Indiana Department of Education
College and Career Readiness
151 West Ohio Street
Indianapolis, IN 46204

HEALTH SCIENCE EDUCATION

Academic Content Standards for this subject area at:
<http://dc.doe.in.gov/Standards/AcademicStandards/index.shtml>

Curriculum Resource Framework for this subject area at:
<http://www.indianastandardsresources.org>

Teacher Requirements for this subject area at:
<http://www.doe.in.gov/educatorlicensing/pdf/AssignmentCode.pdf>

Introduction

Health Science Education is a secondary career education program for students interested in pursuing a career in health care. The Health Science Career Cluster is a cluster of study integrating academics, specific health science technology courses, along with a variety of problem-based and work-based learning opportunities. Work-based learning may include job shadowing, internships, and other clinical experiences that allow students to observe and learn from healthcare professionals.

Every Health Science program provides students with opportunities to explore a variety of health careers and make realistic and satisfying career choices. Students also develop their leadership potential through involvement in HOSA, a student leadership organization for health science students. Students in the Health Science Career Cluster leave high school better prepared for further education and/or immediate employment in the healthcare field.

Health Science pathways include: Therapeutic Services, Diagnostic Services, Health Informatics, Support Services, Biotechnology and Research Development.

ANATOMY & PHYSIOLOGY (A & P)

5276

Anatomy & Physiology is a course in which students explore scientific knowledge that is gained from observation of natural phenomena and experimentation, by designing and conducting investigations guided by theory, and by evaluating and communicating the results of those investigations according to accepted procedures. In the science classroom, student work includes: the process of homeostasis and the essentials of human function at the level of genes, cells, tissues, and organ systems. At the conclusion of this course, students should be able to understand the structure, organization, and function of the various components of the healthy human body in order to apply this knowledge in all health-related fields.

This course includes ample laboratory experiences that illustrate the application of the standards to the appropriate cells, tissues, organs, and organ systems. Students should be able to use basic laboratory equipment such as microscopes, balances, and pipettes.

- Recommended Grade Level: 11-12
- Recommended Prerequisite: First-Year course of same discipline (Biology)
- Recommended Prerequisite: Chemistry, Introduction to Health Care Systems
- Credits: A two-semester course, one credit per semester
- Fulfills a Core 40 Science course requirement for the General, Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas or counts as an Elective or Directed Elective for any diploma

DENTAL ASSISTING I
(DENTASIST I)

5203

Dental Assisting I prepares the student for an entry level dental assisting position. A variety of instructional strategies and technologies are used to teach basic skills that provide an excellent foundation for post secondary dental health occupations. Course content includes in-depth study and practical applications of: infection control procedures, medical emergencies, pharmacology, diseases of the mouth, tooth identification and anatomy, dental charting, identification and utilization of dental instruments, oral hygiene instruction, community dental health education, and nutrition. Simulated in-school laboratories and/or extended laboratory experiences are included to provide opportunities for students to develop clinical skills and appropriate ethical behaviors. Leadership skills are developed and community service provided through HOSA. Students have the opportunity to compete in a number of competitive events at both the state and national level.

- Recommended Grade Level: 10-12
- Recommended Prerequisite: Introduction to Dental Health Careers or Introduction to Health Care Systems or Integrated Health Sciences I and II, and CPR Certification
- Credits: A one-semester course, two to three credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

DENTAL ASSISTING II
(DENTASIST II)

5204

Dental Assisting II introduces the student to technical skills in dental materials, basic chair side assisting, and radiology. Employability skills and professional behavior will be emphasized. Varied instructional strategies and technologies, simulated in-school laboratory and/or extended laboratory experiences are used to teach this course. This course provides an excellent foundation for post-secondary dental health careers. Leadership skills are developed and community service provided through HOSA. Students have the opportunity to compete in a number of competitive events at both the state and national level.

- Recommended Grade Level: 11-12
- Recommended Prerequisite: Chemistry, Dental Assisting I and CPR certification
- Credits: A one-semester course, two to three credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

DENTAL ASSISTING III
(DENTASIST III)

5205

Dental Assisting III is a course designed to provide the dental assisting student with specific knowledge of instrumentation and procedural sequencing in the specialty areas of dentistry. Various instructional strategies and technologies will be used to give the student the opportunity to practice skills in orthodontics, endodontics, prosthodontics, oral surgery, pedodontics, and periodontics. These skills are gained by simulated experiences and/or by clinical rotations in dental facilities. Leadership skills are developed and community service provided through HOSA. Students have the opportunity to compete in a number of competitive events at both the state and national level.

- Recommended Grade Level: 11-12
- Recommended Prerequisite: Chemistry, Dental Assisting II and current CPR certification
- Credits: A one-semester course, two to three credits per semester

- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

DENTAL ASSISTING IV (DENTASIST IV)

5206

Dental Assisting IV utilizes a variety of instructional strategies and technologies to provide students the opportunity to further expand their knowledge, attitudes, and skills in dental health care. One component of this course includes developing business competencies in office procedures, patient management, financial records, and inventory control. The second component of the course might be individualized study, specific to the student's area of interest. Leadership skills are developed and community service provided through HOSA. Students have the opportunity to compete in a number of competitive events at both the state and national level.

- Recommended Grade Level: 12
- Recommended Prerequisite: Chemistry, Dental Assisting III and current CPR certification
- Credits: A one-semester course, two to three credits per semester
- A Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diploma directed elective course
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

HEALTH CAREERS I (HLTHCARRI)

5282

Health Careers I content includes a core of entry level skills common to one specific health career such as patient nursing care, dental care, animal care, medical laboratory, and public health. Course content includes an introduction to health care systems, anatomy, physiology, and medical terminology. Included are leadership skills developed through membership in the student youth organization, HOSA. During the second semester, instruction is integrated with core entry-level skills. The concept of coping with illness is also introduced. In addition, this course includes work ethics and job seeking skills such as job applications, resumes, and interviews. An in-school laboratory provides hands-on, simulated experiences.

The instructor and the students should move from the local school to the actual health care clinical setting for pre-planned, educational experiences which are to be coordinated and evaluated by the school. The pre-planned activities provide an opportunity for the students to apply the knowledge, skills, and attitudes learned in the classroom. Actual instruction and supervision, usually provided on a one-to-one basis, is given by qualified health practitioners in the clinical setting, based on pre-determined specific learning competencies.

- Recommended Grade Level: 11-12
- Recommended Prerequisite: Biology I, Chemistry I; Introduction to Health Care Systems, Introduction to Dental Health Careers, or Integrated Health Sciences I or II
- Credits: A one or two-semester course, one to three credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

HEALTH CAREERS II (HLTHCARRII)

5284

Health Careers II course content includes the competencies that prepare the student for a specific occupation within a health career cluster such as nursing assistant, dental aide, veterinary aide,

medical-clerical aide, or laboratory aide. This course builds on those competencies acquired in Health Careers I and allows for more in-depth knowledge, skills, and attitudes to be developed in a specific occupation. Leadership skills developed through HOSA participation are also included. Simulated in-school laboratory experiences are also a part of this course. An extended laboratory experience may also be scheduled. The related experience is organized and planned around the activities associated with both the student's individual placement and the student's career objectives in health sciences. It is taught during the same semesters that students are receiving clinical experience. Students have the opportunity to compete in a number of HOSA competitive events at both the state and national level.

- Recommended Grade Level: 11-12
- Recommended Prerequisite: Health Careers I
- Credits: A one or two-semester course, one to three credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

HEALTH CAREERS III (HLTHCARRIII)

5286

Health Careers III provides students the opportunity to further expand their knowledge, skills, and attitudes in health care by developing competencies required for another occupation in the same or different occupational cluster, thereby becoming multi-skilled. Thus, the graduate's career options are expanded. For example, a student completing a nurse assistant course may also complete a home health care or laboratory aide course. An extended laboratory experience should be used as a method of instruction in this course. Students have the opportunity to compete in a number of HOSA competitive events at both the state and national level.

- Recommended Grade Level: 12
- Recommended Prerequisite: Health Careers I & II
- Credits: A one or two-semester course, one to three credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

HEALTH CAREERS PRACTICUM (HLTH PRACT)

5207

Health Career Practicum is a two level course designed to provide students with the knowledge, attitudes, and skills needed to make the transition from school to work. Varied instructional strategies and technologies are used to emphasize the course content: Job seeking and job maintenance skills, personal management skills, self analysis to aid in career selection and completion of the application process for admission into a post secondary program of their choice. A second layer of the course is an extended laboratory experience designed to provide students the opportunity to assume the role of a health care provider and practice technical skills, previously learned in the classroom, at the clinical site of their choice. HOSA, the health science student organization, encourages development of leadership, communication, community service and health care related skills.

- Recommended Grade Level: 12
- Recommended Prerequisite: : Health Careers I, a grade point average of C or higher in health science classes, Anatomy and Physiology, Introduction to Health Care Systems or Integrated Health Sciences I & II, Dental Assisting I, or another health science course
- Credits: A one semester course, two to three credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTEGRATED HEALTH SCIENCES I (INHLTHSC I)

5294

Integrated Health Sciences I is designed to integrate biology concepts with those of health and health careers. It provides for the study of the structures and functions of living organisms and their interactions with the environment through regular laboratory and field investigations. Course content includes a study of the function and processes of cells, tissues, organs, and systems of various species of living organisms. The interaction of communities and eco-systems is also emphasized. Supporting health related materials and activities for the course are selected to emphasize: an understanding of the history and development of medical and biological knowledge, the development of a healthy lifestyle, the integration of anatomy/physiology and medical terminology, and professional behavior. The student has the opportunity to earn certification in First Aid and CPR. Students are also introduced to the health-specific career and technical student youth organization, HOSA.

- Recommended Grade Level: 9-10
- Recommended Prerequisite: None
- Credits: A two semester course, two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTEGRATED HEALTH SCIENCES II (INHLTHSC II)

5296

Integrated Health Sciences II integrates chemistry with health science education. Course content includes: properties of matter, atomic structure, bonding, stoichiometry, acid/base chemistry, oxidation reduction, reactions and biochemistry. Supporting health related materials and activities for this course are selected to emphasize an understanding of disease processes within the body systems. Anatomy/physiology and medical terminology will be integrated as it applies to body structure, function, and the disease process. The relationship between chemical processes and human physiology will be emphasized in addition to the relationship between chemical technologies and selected careers. The student has the opportunity to develop leadership skills and professionalism through participation in HOSA.

- Recommended Grade Level: 10
- Recommended Prerequisite: Algebra, Integrated Health Sciences I
- Credits: A two semester course, two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTRODUCTION TO COMMUNITY HEALTH SERVICES (INTRO CHS)

5208

Introduction to Community Health Services further broadens the student's knowledge of the many opportunities in health care. Varied instructional strategies and technologies will be used to introduce additional nursing assisting skills, home health care, hospice care, infant/child care, and community health. The course may be taught in collaboration with the State Certified CNA Program, family and consumer science, a home health agency, and the local community health agency. Students have the opportunity to develop leadership skills and compete in a variety of HOSA competitive events at both the state and national level.

- Recommended Grade Level: 12
- Recommended Prerequisite: Introduction to Health Care Systems or Integrated Health Sciences I & II
- Credits: A one semester course, two to three credits per semester

- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTRODUCTION TO DENTAL HEALTH CAREERS

5209 (INTRO DHC)

Introduction to Dental Health Careers introduces students to the occupational areas and opportunities in the dental health field. Various instructional strategies and technologies will be used to help students gain insight into the many aspects of the current dental health delivery system; e.g., educational requirements, credentialing, legal and ethical responsibilities of the dental health care worker, professionalism, interpersonal communications, patient management and employment. In addition to head and neck anatomy, basic skills related to standard precautions and infection control, CPR and First Aid will be taught. The course will also introduce students to the health-specific career and technical student organization, HOSA.

- Recommended Grade Level: 10-12
- Required Prerequisite: None
- Recommended Prerequisite: Biology, Chemistry, Mathematics, and Anatomy and Physiology
- Credits: A one semester course, one to two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTRODUCTION TO EMERGENCY MEDICAL SERVICES

5210 (INTRO EMS)

Introduction to Emergency Medical Services prepares students for State Certification as a First Responder which could lead to a career in Emergency Medical Services such as an Emergency Medical Technician or a Paramedic. A variety of instructional strategies and technologies will be used to teach students about emergency medical service operations, personal and scene safety, scene and patient assessment, and patient care. Students have the opportunity to develop first responder skills in simulated situations. Participation in HOSA affords the student the opportunity to compete in a variety of competitive events, specifically CPR/First Aid and EMT, at both the state and national level.

- Recommended Grade Level: 12
- Recommended Prerequisite: Anatomy and Physiology, Introduction to Health Care Systems or Integrated Health Sciences I & II
- Credits: A one semester course, one to two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTRODUCTION TO HEALTH CARE SPECIALTIES

5211 (INTRO HCSP)

Introduction to Health Care Specialties is designed to help students gain further insight into the health care industry by introducing them to a number of different health disciplines. A variety of instructional strategies and technologies are used to teach the knowledge, attitudes, and skills related to: surgery, respiratory therapy, gerontology, rehabilitation/restorative care, and alternative treatment modalities. Students have the opportunity to gain additional competencies as they participate in simulated activities and procedures in the classroom. On-site experiences will be used to supplement course content. Participation in HOSA provides the students the opportunity to compete in a variety of competitive events at both the state and national level.

- Recommended Grade Level: 11-12
- Recommended Prerequisite: Introduction to Health Care Systems or Integrated Health Sciences I & II
- Credits: A one semester course, two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTRODUCTION TO HEALTH CARE SYSTEMS

5272

(INT HCSYST)

Introduction to Health Care Systems introduces students to various aspects of the health care industry. Students have the opportunity to explore a number of health related disciplines, learn associated entry level skills, and compare the educational requirements, credentialing and job opportunities of each with their personal abilities and interests as a means to making informed career choices. Varied instructional strategies and technologies are used to introduce medical terminology, anatomy and physiology, content of the Indiana Health Science Education Curriculum and health concepts found in the health and safety courses; with emphasis on a healthy lifestyle, wellness, health maintenance, and disease prevention. The students are also introduced to the health specific career and technical student youth organization, HOSA. Successful completion of this course provides students with CPR/First Aid Certification.

- Recommended Grade Level: 9-12
- Recommended Prerequisite: Biology, Mathematics
- Credits: A one or two-semester course, one or two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTRODUCTION TO HEALTH CARE TECHNOLOGY

5212

(INT HCTECH)

Introduction to Health Care Technology is a course designed to expose students to instruments and equipment used in the health care industry. Emphasis is placed on medical diagnosis and treatment, health maintenance, and disease prevention. Various instructional strategies and technologies will be used to integrate concepts from computer science, physics, anatomy and physiology, and medical terminology in the context of diagnostic and treatment procedures within the health care system. Current and future trends in the health care industry will also be integrated throughout the course. Students will have the opportunity to further explore concepts of health and wellness from the perspective of both the health consumer and health provider. Site visits will provide students the opportunity to continue to explore individual career interests as they see how technology drives health care. Students have the opportunity to develop leadership skills in HOSA and to participate in competitive events at both the state and national level in a wide variety of skills related to their interests.

- Recommended Grade Level: 12
- Recommended Prerequisite: Anatomy and Physiology, Introduction to Health Care Systems or Integrated Health Sciences I&II, two years of science, two years of mathematics, a grade point average of C or higher
- Credits: A one semester course, two to three credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTRODUCTION TO MEDICAL ASSISTING (INTRO MA)

5213

Introduction to Medical Assisting introduces students to some of the duties and responsibilities of administrative and clinical medical assistants. Course content focuses on basic skills that one might see performed in a doctor's office or out-patient facility. Various instructional strategies and technologies will be used to give students the opportunity to gain additional knowledge of anatomy, physiology, and medical terminology. The student will also have the opportunity to refine previously learned technical skills, in addition to gaining additional competencies as they participate in simulated activities and procedures in the classroom. Instruction will be augmented with study tours and shadowing experiences in health care facilities. The HOSA organization provides students the opportunity to compete in a wide variety of competitive events at both the state and national level.

- Recommended Grade Level: 11-12
- Required Prerequisite: None
- Recommended Prerequisite: Introduction to Health Care Systems or Integrated Health Sciences I&II, Biology
- Credits: A one semester course, one or two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTRODUCTION TO PHARMACY (INTROPHARM)

5214

Introduction to Pharmacy introduces students to the field of pharmacy and provides opportunity for exploration of career options within the discipline. Varied instructional strategies and technologies are used to help students gain insight into the roles and responsibilities of the pharmaceutical team, state and federal regulations, pharmaceutical agents, prescription processing, pharmacy maintenance, retail sales, and the impact of pharmaceuticals on the delivery of health care in society. Shadowing experiences help students gain insight into the various roles of the pharmaceutical team in retail drug sales. Students have the opportunity to compete in a variety of HOSA competitive events at both the state and national level.

- Recommended Grade Level: 12
- Recommended Prerequisite: Introduction to Health Care Systems or Integrated Health Sciences I&II, Biology, Chemistry, Mathematics,
- Credits: A one semester course, one or two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

INTRODUCTION TO PHYSICAL THERAPY (INTRO PT)

5215

Introduction to Physical Therapy introduces students to careers in physical therapy, athletic training and sports medicine. Due to the multi-disciplinary/cross training trend in health care delivery, this course will offer an overview of other allied health careers interrelated to physical therapy; such as athletic training and sports medicine. Various instructional strategies and technologies are used to teach students about career opportunities and their associated roles and responsibilities, legal and ethical issues, patient diversity, anatomy and physiology, injury mechanisms, disorders requiring physical therapy, aspects of rehabilitation, safety concerns and patient documentation. This course builds on the competencies learned in introductory courses and provides students the opportunity to develop more in-depth knowledge, skills and attitudes related to physical therapy. Students have the opportunity to compete in

a variety of HOSA competitive events, including sports medicine and physical therapy, at both the state and national level.

- Recommended Grade Level: 11-12
- Recommended Prerequisite: Introduction to Health Care Systems or Integrated Health Sciences I&II, Biology, Chemistry, Anatomy and Physiology
- Credits: A one semester course, one or two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas

MEDICAL TERMINOLOGY (MED TERMS)

5274

Medical Terminology prepares students with language skills necessary for effective, independent use of health and medical reference materials. It includes the study of health and medical abbreviations, symbols, and Greek and Latin word part meanings taught within the context of body systems. This course builds skills in pronouncing, spelling, and defining new words encountered in verbal or written information. Students have the opportunity to acquire skills in interpreting medical records and communications accurately and logically. Materials should invite students to enjoy and be curious about words in their work and personal lives, thus serving as a foundation for enlarging personal vocabularies. The HOSA organization provides students the opportunity to compete in a wide variety of competitive events at both the state and national level.

- Recommended Grade Level: 10-12
- Credits: A two-semester course, one to two credits per semester
- Counts as a Directed Elective and Elective for the Core 40, Core 40 with Academic Honors, and Core 40 with Technical Honors diplomas